

What is claimed is:

1. A superposition of states responding system capable of responding to an entity's potential quantum superposition of states comprising:

a state distinguisher that is capable of distinguishing between first and second states that are

5 components of the entity's potential superposition of states;

a state conditioner that is capable of putting the first and second distinguished states in condition

to be capable of interfering with each other;

an interference actuator that produces self-interference by the entity, when the entity is in a

superposition of states, by enacting interference between the conditioned first and second

10 distinguished states; and

an interference responder that is capable of being responsive to said entity's self-interference.

2. The superposition of states responding system of claim 1 wherein said state distinguisher is further able

to distinguish a first subset of the component states of the entity's potential superposition of states

from a second subset of the component states of the entity's potential superposition of states, said first

15 and second subsets differing from each other and each containing at least one component state of the

entity's potential superposition of states; and said state conditioner is further capable of putting the

first and second distinguished subsets in condition to be capable of interfering with each other; and

said interference actuator is further capable of producing self-interference by the entity, when the

entity is in a superposition of states, by enacting interference between the conditioned first and second

20 subsets.

3. The superposition of states responding system of claim 1 wherein said state distinguisher is further

capable of enabling the superposition of states responding system to be capable of acting upon the

first distinguished state differently than how the superposition of states responding system acts upon

the second distinguished state.

25 4. The superposition of states responding system of claim 2 wherein said state distinguisher is further

capable of enabling the superposition of states responding system to be capable of acting upon the

first distinguished subset differently than how the superposition of states responding system acts upon the second distinguished subset.

5. The superposition of states responding system of claim 1 wherein at least one of said first and second states are eigenstates of an observable of the entity.

5 6. The superposition of states responding system of claim 2, wherein at least one of said component states contained within the first and second subsets is an eigenstate of an observable of the entity.

7. The superposition of states responding system of claim 1, wherein said state conditioner is capable of a state altering operation that can alter at least one of said first and second states so that said first and second states are capable of revealing effects of interference with each other.

10 8. the superposition of states responding system of claim 7, wherein said effects of interference includes a capability of revealing effects of destructive interference.

9. The superposition of states responding system of claim 1, wherein said state conditioner is capable of a phase aligning operation that can selectively influence the phase of at least one of said first and second states.

15 10. The superposition of states responding system of claim 1, wherein said state distinguisher distinguishes between said first and second states by producing a spatial separation between them.

11. The superposition of states responding system of claim 1, wherein said state distinguisher distinguishes between said first and second states by producing a spatial separation between them, and said state conditioner is capable of a phase aligning operation that can selectively influence the phase of at least one of said first and second states, and said interference actuator is capable of enacting the entity's self-interference by selectively recombining the separated and phase aligned first and second states.

12. The superposition of states responding system of claim 1, wherein said interference actuator is capable of producing the entity's self-interference in a manner such that spatial information relating to where the potential self-interference could occur enables the superposition of states responding system to respond to said entity's self-interference.

13. The superposition of states responding system of claim 1, wherein said interference actuator is capable of producing the entity's self-interference in a manner such that temporal information relating to when the potential self-interference could occur enables the superposition of states responding system to respond to said entity's self-interference.

5 14. The superposition of states responding system of claim 1, wherein said interference responder is capable of responding to at least one of a range of manifestations of interference, said range of manifestations of interference including both positive manifestations that are direct evidence of the entity's self-interference, and negative manifestations that indirectly indicate the entity's self-interference by the lack of evidence that would otherwise be present if the entity did not self-interfere.

10 15. The superposition of states responding system of claim 14, wherein said positive manifestations can involve evidence that would be not available in the same manner were the entity to not self-interfere, and wherein said negative manifestations can involve evidence that is lacking due to the entity's destructive self-interference.

15 16. The superposition of states responding system of claim 1, wherein said superposition of states responding system is also capable of preserving the entity's superposition of states throughout at least a portion of the superposition of states responding system's interaction with the entity, and wherein said superposition of states preserving portion of the entity's interaction with the superposition of states responding system can involve the entirety of said entity's interaction with the superposition of states responding system.

20 17. The superposition of states responding system of claim 16, wherein said superposition of states responding system has both superposition of states preserving and superposition of states demolishing capabilities when responding to the entity's superposition of states.

25 18. The superposition of states responding system of claim 17, wherein said superposition of states responding system can be switched between the superposition of states preserving and demolishing capabilities.

19. The superposition of states responding system of claim 18, wherein said switching between the superposition of states preserving and demolishing capabilities can be selectively effected.

20. The superposition of states responding system of claim 19, wherein said selective switching can be effected in a delayed-choice manner.

5 21. The superposition of states responding system of claim 1, wherein said superposition of states responding system is capable of confirming whether the entity is in a superposition of states.

22. The superposition of states responding system of claim 1, wherein said superposition of states responding system is capable of discerning said entity that is in a superposition of states from said entity that is not in an superposition of states.

10 23. The superposition of states responding system of claim 1, wherein said superposition of states responding system is capable of both discerning said entity that is in a superposition of states from said entity that is not and of confirming whether said entity is in a superposition of states.

15 24. The superposition of states responding system of claim 23, wherein said confirming and discerning capabilities can be effected jointly and alternatively, and wherein at least one of said confirming, discerning, and jointly discerning and confirming capabilities can be selectively effected.

25. The superposition of states responding system of claim 22, wherein said superposition of states responding system is further capable of preserving the entity's superposition of states throughout at least a portion of the superposition of states responding system's interaction with the entity, and wherein said superposition of states preserving portion of the entity's interaction with the superposition of states responding system can involve the entirety of said entity's interaction with the superposition of states responding system.

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26. The superposition of states responding system of claim 25, wherein said superposition of states responding system has superposition of states preserving and superposition of states demolishing capabilities.

27. The superposition of states responding system of claim 26, wherein said superposition of states responding system can be switched between the superposition of states preserving and demolishing capabilities.

28. The superposition of states responding system of claim 27, wherein said switching between the superposition of states preserving and demolishing capabilities can be selectively effected.

29. The superposition of states responding system of claim 28, wherein said selective switching between the superposition of states preserving and demolishing capabilities can be effected in a delayed-choice manner.

30. The superposition of states responding system of claim 24, wherein at least one of said confirming, discerning, and jointly discerning and confirming capabilities can be selectively effected in a delayed-choice manner.

31. The superposition of states responding system of claim 1, when interacting with a first entity that is entangled with at least a second entity that shares the superposition of states with said first entity, is further capable of responding to said second entity's superposition of states.

32. The superposition of states responding system of claim 1, when interacting with a first entity that is entangled with at least a second entity that shares said first entity's superposition of states, is further capable of responding to said second entity's entanglement.

33. The superposition of states responding system of claim 31, when interacting with the first entity that is entangled with at least the second entity that shares the superposition of states with said first entity, is further capable of responding to said second entity's superposition of states without directly interacting with said second entity, and without interacting with any effects from any interaction with said second entity.

34. The superposition of states responding system of claim 32, when interacting with the first entity that is entangled with at least the second entity that shares the superposition of states with said first entity, is further capable of responding to said second entity's entanglement without directly interacting with

said second entity, and without interacting with any effects from any extraneous interaction with said second entity.

35. The superposition of states responding system of claim 31, when interacting with the first entity that is entangled with at least the second entity that shares the superposition of states with said first entity, is also capable of preserving the second entity's superposition of states throughout at least a portion of the superposition of states responding system's interaction with the first entity, and wherein said second entity superposition of states preserving portion of the first entity's interaction with the superposition of states responding system can involve the entirety of said first entity's interaction with the superposition of states responding system.

36. The superposition of states responding system of claim 35, wherein said superposition of states responding system has both second entity superposition of states preserving and second entity superposition of states demolishing capabilities.

37. The superposition of states responding system of claim 36, wherein said superposition of states responding system can be switched between second entity superposition of states preserving and second entity superposition of states demolishing capabilities.

38. The superposition of states responding system of claim 37, wherein said switching between the second entity superposition of states preserving and second entity superposition of states demolishing capabilities can be selectively effected.

39. The superposition of states responding system of claim 37, wherein said switching between the second entity superposition of states preserving and second entity superposition of states demolishing capabilities can be effected in a delayed-choice manner.

40. The superposition of states responding system of claim 31, wherein said superposition of states responding system is capable of confirming whether the second entity is in a superposition of states.

41. The superposition of states responding system of claim 31, wherein said superposition of states responding system is capable of discerning said second entity that is in a superposition of states from said second entity that is not in an superposition of states.

42. The superposition of states responding system of claim 31, wherein said superposition of states responding system is capable of both discerning said second entity that is in a superposition of states from said second entity that is not and of confirming whether said second entity is in a superposition of states.

5 43. The superposition of states responding system of claim 42, wherein said confirming and discerning capabilities can be effected both jointly and alternatively, and wherein at least one of said confirming, discerning, and jointly discerning and confirming capabilities are capable of being selectively effected.

44. The superposition of states responding system of claim 1, wherein said entity is selected from a group  
10 consisting of elementary particles, bosons, fermions, atoms, molecules, Bose-Einstein condensates, virtual particles, and composites of the members of this group.

45. The superposition of states responding system of claim 1, wherein any of said state distinguisher, said state conditioner, said interference actuator, and said interference responder can effect their respective operations by utilizing electromagnetic phenomena.

15 46. A method of providing the capability of responding to an entity's potential quantum superposition of states comprising the steps of:

providing the capability of distinguishing between first and second states that are components of the entity's potential superposition of states;

providing the capability of putting said first and second distinguished states in condition to be  
20 capable of interfering with each other;

providing the capability of producing self-interference by the entity, when the entity is in a superposition of states, by enacting interference between said conditioned first and second distinguished states; and

providing the capability of responding to manifestations of said entity's self-interference.

25 47. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of distinguishing between first and second

states is further capable of distinguishing a first subset of the component states of the entity's potential superposition of states from a second subset of the component states of the entity's potential superposition of states, said first and second subsets differing from each other and each containing at least one component state of the entity's potential superposition of states; and said capability of conditioning said first and second states is further capable of putting the first and second distinguished subsets in condition to be capable of interfering with each other; and, when the entity is in a superposition of states, said capability of producing self-interference by the entity is further capable of enacting interference between the conditioned first and second subsets.

48. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of distinguishing between first and second states provides the further capability of acting upon the first distinguished state differently than how the second distinguished state is acted upon.

49. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 47, wherein said capability of distinguishing between first and second subsets provides the further capability of acting upon the first distinguished subset differently than how the second distinguished subset is acted upon.

50. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein at least one of said first and second states are eigenstates of an observable of the entity.

51. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 47, wherein at least one of said component states contained within the first and second subsets is an eigenstate of an observable of the entity.

52. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of conditioning is further capable of altering at least one of said first and second states so that said first and second states are capable of revealing effects of interference with each other.



53. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 52, wherein said effects of interference includes a capability of revealing effects of destructive interference.

54. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of conditioning is further capable of selectively influencing the phase of at least one of said first and second states.

55. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of distinguishing between said first and second states involves producing a spatial separation between them.

56. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of distinguishing between said first and second states involves producing a spatial separation between them, and said capability of conditioning is further capable of selectively influencing the phase of at least one of said first and second states, and said capability of producing self-interference by the entity is further capable of enacting the entity's self-interference by selectively recombining the separated and phase aligned first and second states.

57. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of producing self-interference by the entity involves utilizing spatial information relating to where the potential self-interference could occur in the providing of the capability of responding to manifestations of said entity's self-interference.

58. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of producing self-interference by the entity involves utilizing temporal information relating to when the potential self-interference could occur in the providing of the capability of responding to manifestations of said entity's self-interference.

59. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said capability of responding to manifestations of said entity's self-interference involves capabilities of responding to at least one of a range of manifestations of interference, said range of manifestations of interference including both positive  
5 manifestations that are direct evidence of the entity's self-interference, and negative manifestations that indirectly indicate the entity's self-interference by a lack of evidence that would otherwise be present if the entity did not self-interfere.

60. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 59, wherein said positive manifestations can involve evidence that would  
10 not be available in the same manner were the entity to not self-interfere, and wherein said negative manifestations can involve evidence that is lacking due to the entity's destructive self-interference.

61. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said method also provides a capability of preserving the entity's superposition of states throughout at least a portion of the method's interaction with the  
15 entity, and wherein said superposition of states preserving portion of the method's interaction with the entity can involve the entirety of said entity's interaction with the method.

62. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 61, wherein said method is capable of providing both superposition of states preserving and superposition of states demolishing capabilities when responding to the entity's  
20 superposition of states.

63. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 62, wherein said method is further capable of switching between superposition of states preserving and demolishing capabilities.

64. The method of providing the capability of responding to an entity's potential quantum superposition  
25 of states according to claim 63, wherein said switching between the superposition of states preserving and demolishing capabilities can be selectively effected.

65. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 64, wherein said selective switching can be effected in a delayed-choice manner.

66. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said method provides the further capability of confirming whether the entity is in a superposition of states.

67. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said method provides the further capability of discerning said entity that is in a superposition of states from said entity that is not in a superposition of states.

68. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said method provides the further capability of both discerning said entity that is in a superposition of states from said entity that is not and of confirming whether said entity is in a superposition of states.

69. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 68, wherein said confirming and discerning capabilities are capable of being effected jointly and alternatively, and wherein at least one of said confirming, discerning, and jointly discerning and confirming capabilities can be selectively effected.

70. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 67, wherein said method provides the further capability of preserving the entity's superposition of states throughout at least a portion of the method's interaction with the entity, and wherein said superposition of states preserving portion of the entity's interaction with the method can involve the entirety of said entity's interaction with the method.

71. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 70, wherein said method provides superposition of states preserving and superposition of states demolishing capabilities.

72. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 71, wherein said method provides the further capability of switching between the superposition of states preserving and demolishing capabilities.

73. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 72, wherein said switching between the superposition of states preserving and demolishing capabilities can be selectively effected.

74. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 73, wherein said selective switching between the superposition of states preserving and demolishing capabilities can be effected in a delayed-choice manner.

75. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 69, wherein at least one of said confirming, discerning, and jointly discerning and confirming capabilities can be selectively effected in a delayed-choice manner.

76. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, when interacting with a first entity that is entangled with at least a second entity that shares the superposition of states with said first entity, provides the further capability of responding to said second entity's superposition of states.

77. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, when interacting with a first entity that is entangled with at least a second entity that shares the superposition of states with said first entity, provides the further capability of responding to said second entity's entanglement.

78. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 76, when interacting with the first entity that is entangled with at least the second entity that shares the superposition of states with said first entity, provides the further capability of responding to said second entity's superposition of states without directly interacting with said second entity, and without interacting with any effects from any extraneous interaction with said second entity.

79. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 77, when interacting with the first entity that is entangled with at least the second entity that shares the superposition of states with said first entity, provides the further capability of responding to said second entity's entanglement without directly interacting with said second entity, and without interacting with any effects from any extraneous interaction with said second entity.

80. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 76, when interacting with the first entity that is entangled with at least the second entity that shares the superposition of states with said first entity, provides the further capability of preserving the second entity's superposition of states throughout at least a portion of the method's interaction with the first entity, and wherein said second entity superposition of states preserving portion of the first entity's interaction with the method can involve the entirety of said first entity's interaction with the method.

81. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 80, wherein said method provides the further capabilities of preserving and demolishing the second entity's superposition of states.

82. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 81, wherein said method provides the further capability of switching between preserving and demolishing the second entity's superposition of states.

83. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 82, wherein said method provides the further capability of selectively effecting said switching between preserving and demolishing the second entity's superposition of states.

84. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 82, wherein said capability of switching between the second entity

superposition of states preserving and second entity superposition of states demolishing capabilities can be effected in a delayed-choice manner.

85. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 76, wherein said method provides the further capability of confirming whether the second entity is in a superposition of states.

86. The superposition of states responding system of claim 76, wherein said method provides the further capability of discerning said second entity that is in a superposition of states from said second entity that is not in an superposition of states.

87. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 76, wherein said method provides the further capabilities of both discerning said second entity that is in a superposition of states from said second entity that is not and of confirming whether said second entity is in a superposition of states.

88. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 87, wherein said method's confirming and discerning capabilities can be effected jointly and alternatively, and wherein at least one of said confirming, discerning, and jointly discerning and confirming capabilities are capable of being selectively effected.

89. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein said entity is selected from a group consisting of elementary particles, fermions, bosons, atoms, molecules, Bose-Einstein condensates, virtual particles, and composites of the members of this group.

90. The method of providing the capability of responding to an entity's potential quantum superposition of states according to claim 46, wherein any of said capabilities of state distinguishing, state conditioning, interference producing, and responding to manifestations of self-interference can be effected by utilizing electromagnetic phenomena.

91. An apparatus capable of responding to an entity's potential quantum superposition of states comprising:

a preparatory conditioner that, when the entity is in a quantum superposition of states, puts said entity in condition to be capable of self-interference,;

an interference actuator that manifests said entity's self-interference, when the entity is in a quantum superposition of states and has been put in condition for self-interference by said preparatory conditioner; and

an interference responder that is capable of being responsive to manifestations of said entity's self-interference.

92. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 91, wherein said preparatory conditioner provides a capability of effecting an eigenstate distinguishing operation that is capable of distinguishing between eigenstates of an observable that are components of the entity's superposition of states.

93. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 91, wherein said preparatory conditioner provides a capability of effecting at least one separate action on at least one eigenstate that is a component of the entity's superposition of states, said separate action differing from at least one of the actions that are effected by the apparatus on at least one other eigenstate that is a component of the entity's superposition of states.

94. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 91, wherein said preparatory conditioner provides a capability of effecting an eigenstate altering operation on at least one of the eigenstates that are components of the entity's superposition of states so that at least two of the component eigenstates are then capable of interfering with each other.

95. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 91, wherein said preparatory conditioner provides a capability of effecting a phase aligning operation that can influence the phase of at least one of the eigenstates that are components of the entity's superposition of states.

96. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 91, wherein said interference actuator provides a capability of effecting an interfering operation that can, when the entity has been put into condition to be capable of self-interference by the preparatory conditioner, bring about self-interference by the entity, the possible  
5 types of said self-interference including varying degrees of destructive self-interference which can be of sufficient degree so as to become complete destructive self-interference.

97. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 96, wherein said varying degrees of destructive interference can be selectively effected, and said selective effecting of the varying degrees of destructive interference can be brought  
10 about in a controllable manner.

98. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 91, wherein said interference responder's capability of being responsive to manifestations of the entity's self-interference can involve various capabilities of responding to at least one of a variety of manifestations of the entity's self-interference , said variety of manifestations  
15 of interference including both positive manifestations that are direct evidence of the entity's self-interference, and negative manifestations that indirectly indicate the entity's self-interference by a lack of evidence that would otherwise be present if the entity did not self-interfere.

99. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 98, wherein said positive manifestations can involve evidence that would not be  
20 available in the same manner were the entity to not self-interfere, and wherein said negative manifestations can involve evidence that is lacking due to the entity's destructive self-interference.

100. The apparatus capable of responding to an entity's potential quantum superposition of states according to clam 91, wherein said interference responder provides a capability of effecting a conditional response to the entity's potential superposition of states, said conditional response being  
25 capable of differentiating in accordance with differentiation in the manifestations of the entity's self-



interference, said differentiation in the conditional response including a capability of effecting a lack of response when the entity manifests destructive self-interference.

101. The apparatus capable of responding to an entity's potential quantum superposition of states

according to clam 100, wherein said conditional response differentiation can include at least one of

5 confirming said manifestations of self-interference, confirming the lack of said manifestations of self-interference, discerning between various manifestations of self-interference, and combinations thereof.

102. The apparatus capable of responding to an entity's potential quantum superposition of states

according to clam 101, wherein at least one of said preparatory conditioner, said interference actuator,

10 and said interference responder can operate in a delayed-choice manner.

103. The apparatus capable of responding to an entity's potential quantum superposition of states

according to clam 91, wherein at least one of said preparatory conditioner, said interference actuator,

and said interference responder can operate in a manner that preserves the entity's superposition of

states throughout at least a portion of the apparatus' interaction with the entity, and wherein the entity

15 superposition of states preserving portion of the entity's interaction with the apparatus can involve the entirety of the entity's interaction with the apparatus.

104. The apparatus capable of responding to an entity's potential quantum superposition of states

according to clam 103, wherein the entity superposition of states preserving operation of at least one

of said preparatory conditioner, said interference actuator, and said interference responder is capable

20 of being selectively effected; and said selective effecting of said superposition of states preserving

operation of said preparatory conditioner, said interference actuator, and said interference responder

is capable of being brought about in a controllable manner; and said selective effecting of said

superposition of states preserving operation of said preparatory conditioner, said interference actuator,

and said interference responder is capable of being effected in a delayed choice manner.

25 105. The apparatus capable of responding to an entity's potential quantum superposition of states

according to clam 91, wherein said entity is selected from a group consisting of elementary particles

including fermions and bosons, atoms, molecules, Bose-Einstein condensates, virtual particles, and composites of the members of this group.

106. The apparatus capable of responding to an entity's potential quantum superposition of states

according to clam 105, wherein said entity is a photon and said apparatus is capable of utilizing at

5 least one of optical fibers, crystals including birefringent crystals, reflecting surfaces including perfect

and imperfect mirrors, optical Kerr media, masking agents including screens, photo detectors, charge

coupled devices, scattering elements, wave plates including quarter and half wave plates, photon

counters, scintillation devices, devices employing the optical Kerr effect, and devices employing the

Casimir effect in the operations of at least one of the preparatory conditioner, interference actuator,

10 and interference responder.

106. The apparatus capable of responding to an entity's potential quantum superposition of states

according to clam 105, wherein said entity is capable of possessing at least one of an electric charge,

a magnetic moment, and a magnetic spin; and said apparatus is capable of utilizing electromagnetic

phenomena in the operations of at least one of the preparatory conditioner, interference actuator, and

15 interference responder.

107. A method of conditionally responding to an entity's potential quantum superposition of states

comprising the steps of:

conditioning an entity that is potentially in a quantum superposition of states, wherein said  
conditioning enables the entity, when the entity is in a superposition of states, to be capable of self-

20 interference;

realizing the entity's potential self-interference, when the entity is in a superposition of states and

has been put in condition for self-interference by said conditioning; and

responding to manifestations of the entity's potential self-interference.